



# City of Carlsbad

## Building Department

### RESIDENTIAL PATIO COVERS

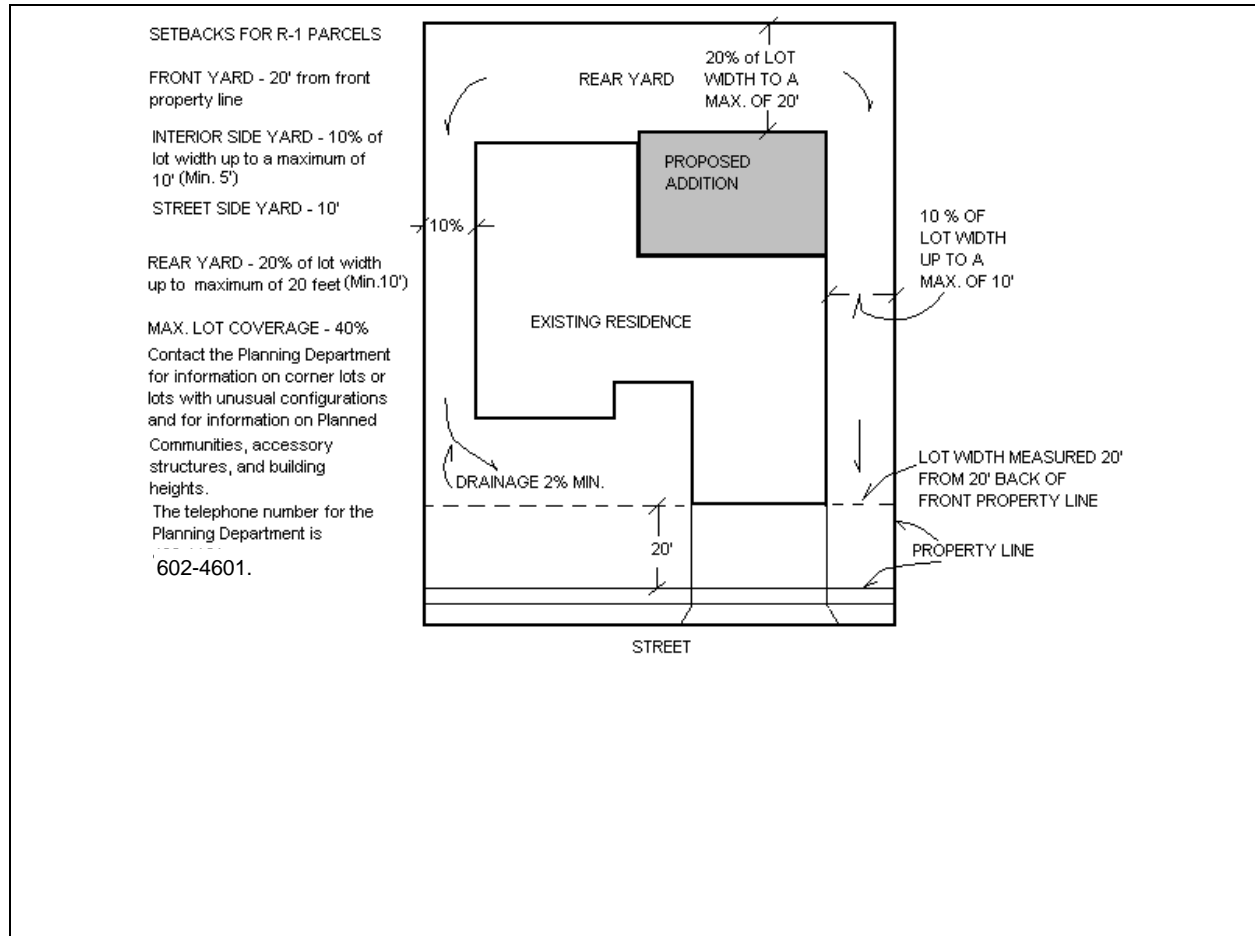
Patio covers are one story, roofed structures not more than 12 feet above grade and used for outdoor recreational purposes. A Building Permit is required for patio covers attached to a residence. Residential patio covers less than 300 square feet in size and at least ten feet from any other structure on the lot do not require a building permit from the City. However, all patio covers, permitted or not, must comply with the setback requirements in this handout. This hand out describes what plans are necessary to secure a patio cover permit. To assist you, there is a sample of a plot plan, span tables for joists, and beams, and a footing schedule for foundation requirements. There are also connection details to use for typical connections. You may use this handout in lieu of a separate design when the patio cover is attached to the house on one complete side. *If you design the patio cover yourself, or your patio cover is either free-standing or outside the span table limits in this handout, please provide a foundation plan, framing details, and other details and elevations to show the extent of the proposed work. A lateral analysis may be required for free-standing patio covers.*

If you use the attached tables and plans, please submit the following:

1. Two Identical Site Plans showing:
  - a) Property lines with dimensions.
  - b) Proposed roof area of the patio cover.
  - c) Distances from posts to property lines.
  - d) All existing structures on the property.
  - e) Indicate the dimensions of the patio cover and the total roofed area.
  - f) Any easements on the property.
  - g) Show slopes or topography of the lot
2. A Building Permit Application with the following:
  - a) Name of the property owner.
  - b) Home Phone Number
  - c) Site address, assessor's parcel number, lot number, subdivision name or number.
  - d) Contractor's name, State License Number and City Business License Number; or an Owner-Builder Declaration Form (Available at the Building Department Counter).
  - e) Copy of Worker's Compensation Certificate
  - f) Signature of Applicant

If you are applying for a building permit in the Coastal Zone, you may need a Coastal Development Permit or an exemption. Contact the Planning Department for details. A Coastal Zone map is part of this handout. If you are applying for a building permit in a subdivision with a homeowner's association, you should secure architectural review prior to proceeding with the project. The City does not enforce or specifically review provisions of homeowners' association CC&R's. HOA requirements may be different than City requirements. If your home is part of a Planned Unit Development or a condominium, please see text of this handout.

## TYPICAL R-1 PLOT PLAN



## Minimum Square Footing Sizes (inches)<sup>1,2</sup>

Post Spacing	Rafter Span (in feet)							
	6	8	10	12	14	16	18	20
<b>4</b>	12	12	12	12	12	12	12	12
<b>6</b>	12	12	12	12	12	12	12	14
<b>8</b>	12	12	12	12	12	14	14	14
<b>10</b>	12	12	12	14	14	14	16	16
<b>12</b>	12	12	14	14	16	16	18	18
<b>14</b>	12	12	14	16	16	18	18	20
<b>16</b>	12	14	14	16	18	18	20	20
<b>18</b>	12	14	16	18	18	20	20	22
<b>20</b>	14	14	16	18	20	20	22	24

1. Assumes 1,000 psf soil bearing capacity

2. The minimum depth for all footings is 12 inches into natural grade

## Minimum Rafter Sizes

<b>Rafter Span</b>	<b>Rafter Spacing - Center to Center (in inches)</b>			
	<b>12" (5/16" ply-wood sheathing)</b>	<b>16" (1/2" ply-wood sheathing)</b>	<b>24" (1/2" ply-wood sheathing)</b>	<b>32" (5/8" ply-wood sheathing)</b>
<b>6</b>	2 x 4	2 x 4	2 x 4	2 x 4
<b>7</b>	2 x 4	2 x 4	2 x 4	2 x 4
<b>8</b>	2 x 4	2 x 4	2 x 6	2 x 6
<b>9</b>	2 x 4	2 x 6	2 x 6	2 x 6
<b>10</b>	2 x 6	2 x 6	2 x 6	2 x 6
<b>11</b>	2 x 6	2 x 6	2 x 6	2 x 8
<b>12</b>	2 x 6	2 x 6	2 x 6	2 x 8
<b>13</b>	2 x 6	2 x 6	2 x 8	2 x 8
<b>14</b>	2 x 6	2 x 6	2 x 8	2 x 8
<b>15</b>	2 x 6	2 x 8	2 x 8	2 x 10
<b>16</b>	2 x 8	2 x 8	2 x 8	2 x 10
<b>17</b>	2 x 8	2 x 8	2 x 10	2 x 10
<b>18</b>	2 x 8	2 x 8	2 x 10	2 x 10
<b>19</b>	2 x 8	2 x 10	2 x 10	2 x 12
<b>20</b>	2 x 8	2 x 10	2 x 10	2 x 12

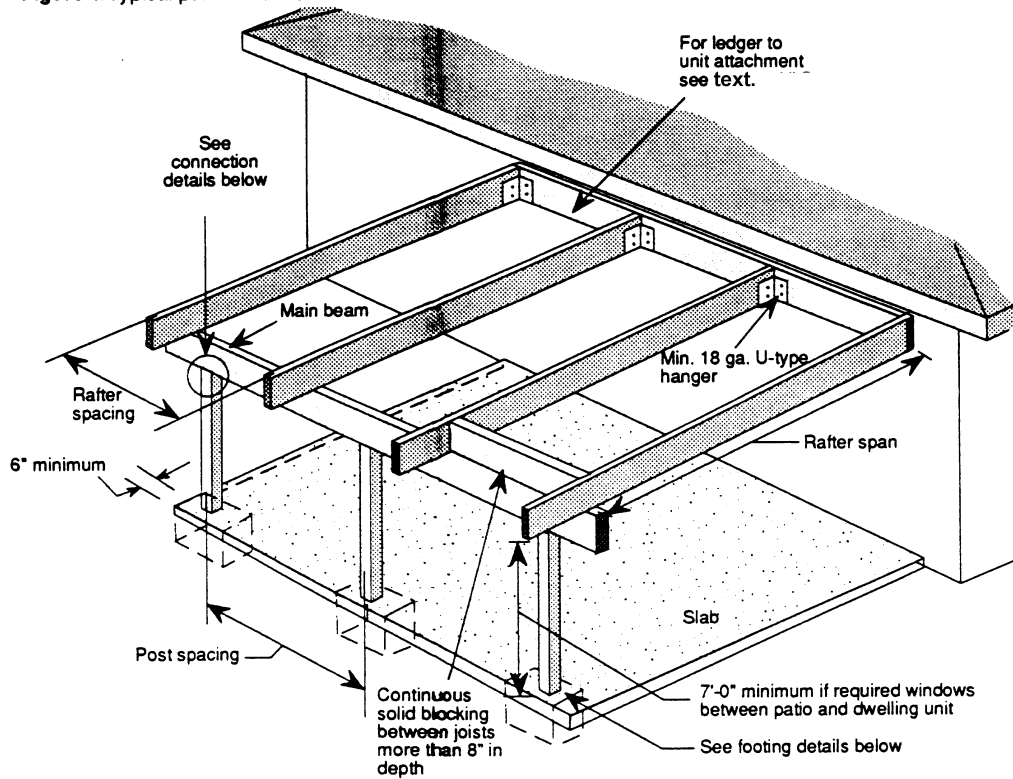
**NO GAS LINE MAY BE INSTALLED UNDER ANY PATIO COVER OR DECK**

## Minimum Beam Sizes

<b>Post Spacing</b>	<b>Rafter Span (in feet)</b>								
	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>	<b>12</b>	<b>14</b>	<b>16</b>	<b>18</b>	<b>20</b>
<b>4</b>	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4
<b>6</b>	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 4	4 x 6
<b>8</b>	4 x 4	4 x 4	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6
<b>10</b>	4 x 4	4 x 6	4 x 6	4 x 6	4 x 6	4 x 6	4 x 8	4 x 8	4 x 8
<b>12</b>	4 x 6	4 x 6	4 x 8	4 x 8	4 x 8	4 x 8 6 x 8	4 x 8 6 x 8	4 x 8 6 x 8	4 x 10 6 x 8
<b>14</b>	4 x 6	4 x 8	4 x 8	4 x 8	4 x 8 6 x 8	4 x 10 6 x 8	4 x 10 6 x 10	4 x 10 6 x 10	4 x 10 6 x 10
<b>16</b>	4 x 8	4 x 8	4 x 8 6 x 8	4 x 10 6 x 8	4 x 10 6 x 8	4 x 10 6 x 10	4 x 12 6 x 10	4 x 12 6 x 10	4 x 14 6 x 10
<b>18</b>	4 x 8	4 x 8 6 x 8	4 x 10 6 x 8	4 x 10 6 x 8	4 x 10 6 x 10	4 x 12 6 x 10	4 x 12 6 x 10	4 x 14 6 x 12	4 x 14 6 x 12
<b>20</b>	4 x 8 6 x 8	4 x 10 6 x 8	4 x 10 6 x 10	4 x 12 6 x 10	4 x 12 6 x 10	4 x 14 6 x 12	4 x 14 6 x 12	6 x 12	6 x 14

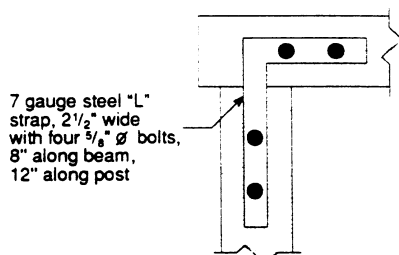
## TYPICAL PATIO COVER DETAILS

**Figure 1/Typical patio construction**

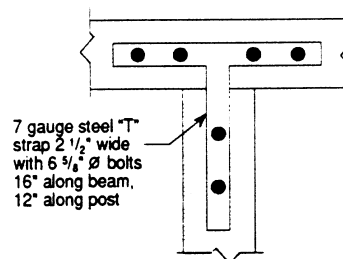


**Figure 2/Connection, anchor and footing details**

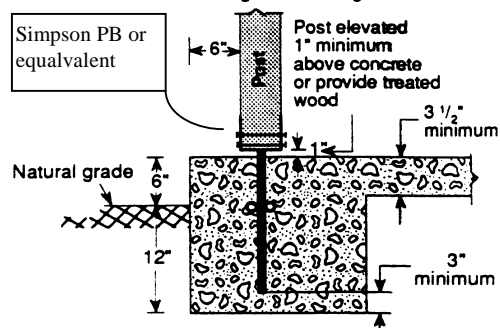
**Case 1/Connection, end condition**



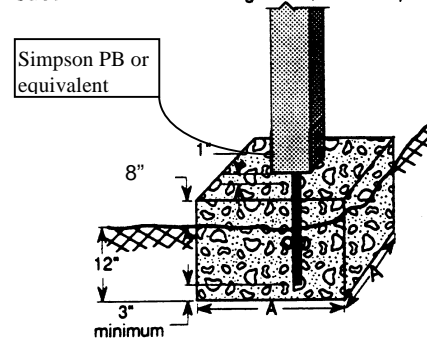
**Case 2/Connection, interior condition**

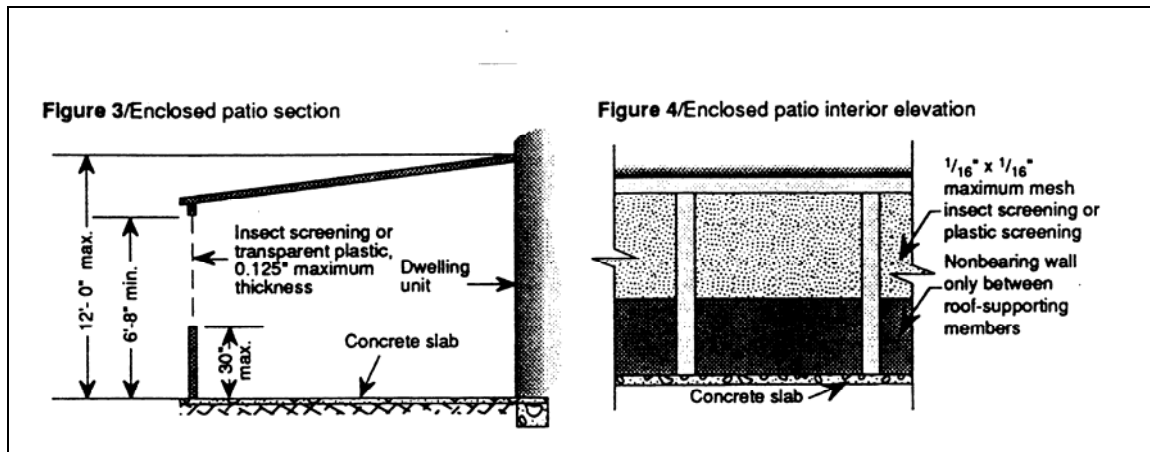


**Case 3/Anchor and footing detail, integrated slab**



**Case 4/Anchor and footing detail, isolated pier**





## PATIO COVER CONSTRUCTION SPECIFICATIONS

1. Concrete
  - a) All concrete for footings must be a minimum of 2,000 psi.
2. Lumber
  - a) Lumber must be Douglas Fir-larch No.2 or Better. Lumber must be grade marked. All posts must be a minimum of 4x4 and may be required to be protected from decay and termites if within 6" of finish grade.
3. Connections
  - a) Post anchorage shall be accomplished with a standard manufactured post base installed per the manufacturer's instructions. Footings are required when the post supports a load exceeding 750 pounds. For lesser loads, a 3 1/2" slab on grade section may be substituted for required footings.
  - b) When the house is used to support one end of the patio cover, the main beam may be replaced on the side attached to the house by a ledger. The ledger shall be the same size as the rafters and fastened to the structural frame of the house by 1/2" x 5" lag screws spaced at 32" on center for rafters up to a 10' span. Lag screws must be spaced at 16" on center for rafters between 10'1" and 20'. Rafters may not be solely supported by the existing rafter tails or fascia of the house.
4. Patio Enclosures
  - a) Patios may be enclosed as long as the following criteria is followed:
    - 1) The enclosure walls may have any configuration provided the open area of the longer wall and one additional wall is equal to at least 65% of the area below 6'8" of each wall as measured from the floor (see City of San Diego Building Newsletter 31-)
    - 2) Openings may be enclosed with insect screening or plastic that is readily removable translucent or transparent plastic not more than 1/8" in thickness. ( See figures 3 and 4 above)
    - 3) A patio enclosure requires a permit. The permit may be issued as part of the original patio cover permit, or it may be obtained at a later time. Enclosures may be used for outdoor recreational purposes only . Patio enclosures may not be used as habitable space.

## 5. Tables

### a) The above span and footing tables make the following assumptions:

- 1) Roof live load is 10 psf
- 2) Roof dead load is 7 psf
- 3) All lumber is Douglas fir-larch No.2 or Better;  
     $F_b = 825$  psi  
     $F_v = 90$  psi  
     $E = 1,200,000$  psi  
    Repetitive member use  
    All posts are 4x4 minimum  
    Soil bearing pressure is 1000 psf minimum

## 6. Electrical

- a) All electrical work in a patio cover or enclosure shall be weather tight as for exterior installations.

## 7. Inspections

- 1) Normally two inspections of a patio cover are required:
  - 1) When footings have been excavated but before concrete has been placed, (note: photographs of footings are not an acceptable substitute for an inspection of required footings).
  - 2) When all structural framing is completed. If solid roof sheathing is installed over the framing, a roof nailing inspection is required prior to placing the roof covering.  
Note: The project is not legally complete until the inspector of record signs the space on the job record card as final.
  - 3) The job record card and approved plans must be available for all inspections. The job record card and approved plans should then be retained by the owner as a record of the approved construction.

## 8. Patio covers in PUD's and Condominium projects

- a) All patio covers must comply with the above requirements.
- b) Posts supporting the patio cover cannot be located closer than 3' to the property line unless they are protected by one-hour construction (e.g. stucco)
- c) The patio cover roof may only project one foot into the three foot setback area. It must also have one hour protection as noted above.
- d) Proof of HOA architectural approval must be shown.
- e) For the property lines of a project, all applicable setback requirements for the underlying zone shall be complied with. If the underlying zone is P-C, the setback requirements of the PUD ordinance shall be complied with. Setbacks for PUD's and P-C Zones may be more restrictive than typical R-1 setbacks or minimum Building Code setbacks. Contact the planning Department for information specific to your Planned Community or condominium project.